



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,198	11/03/2003	Shunpei Yamazaki	0553-0109.04	3962

7590 01/11/2006

Edward D. Manzo
Cook, Alex, McFarron, Manzo,
Cummings & Mehler, Ltd.
200 West Adams St., Ste. 2850
Chicago, IL 60606

EXAMINER

INGHAM, JOHN C

ART UNIT PAPER NUMBER

2814

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

file

Office Action Summary	Application No. 10/700,198	Applicant(s) YAMAZAKI ET AL.	
	Examiner John C. Ingham	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-95 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23-40 and 51-63 is/are allowed.
- 6) ☒ Claim(s) 41-50 and 64-95 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/19/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The corrected drawings filed on December 19th, 2005 are accepted and made of record.

Terminal Disclaimer

2. Terminal disclaimers regarding patent 6,597,014 and patent 6,667,494 have been accepted and made of record.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims **41-45** are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 77 of U.S. Patent No. 6,670,635.

Regarding claim **41**, although the conflicting claims are not identical, they are not patentably distinct from each other because the “crystalline semiconductor film” described in ‘635 meets the limitations of the instant claimed “active layer.

Regarding claim **42**, patent ‘635 claims a device according to claim 77 wherein said semiconductor device is incorporated into one selected from a group consisting of a video camera, a still camera, a projector, a head mount display, a car navigation system, a personal computer, a portable information terminal, a mobile computer and a portable telephone (claim 79).

With regards to claim **43**, patent ‘635 claims a device wherein said substrate comprises a material selected from the group consisting of quartz, silicon, and ceramic (claim 77 “insulating substrate”).

With regards to claim **44**, patent ‘635 claims a device wherein said active layer comprises silicon (claim 77, “crystalline semiconductor film comprising silicon”).

With regards to claim **45**, patent ‘635 (claim 77 in view of claim 22) claims a device wherein said floating gate comprises silicon.

4. Claims **46-50** are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 22 of U.S. Patent No. 6,670,635 in view of Assaderaghi (US 5,811,857).

Regarding claim **46**, patent ‘635 claims an active layer over a substrate and a floating gate adjacent to said active layer with a gate insulator therebetween. Patent ‘635 does not specify that the threshold coefficient of the device is 60-100mV/decade.

Art Unit: 2814

Assaderaghi teaches an ideal subthreshold coefficient of 60mV/decade (col 5 ln 43). It would have been obvious to one of ordinary skill in the art at the time of the invention to claim the ideal subthreshold coefficient for the device.

Regarding claim **47**, patent '635 claims a device according to claim 22 wherein said semiconductor device is incorporated into one selected from a group consisting of a video camera, a still camera, a projector, a head mount display, a car navigation system, a personal computer, a portable information terminal, a mobile computer and a portable telephone (claim 28).

With regards to claim **48**, patent '635 claims a device wherein said substrate comprises a material selected from the group consisting of quartz, silicon, and ceramic (claim 22 "insulating surface").

With regards to claim **49**, patent '635 claims a device wherein said active layer comprises silicon (claim 77 in view of claim 22, "crystalline semiconductor film comprising silicon").

With regards to claim **50**, patent '635 (claim 77 in view of claim 22) claims a device wherein said floating gate comprises silicon.

5. Claims **64-69, 71-76, 78-85, and 87-94** are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,667,494 in view of Huang.

Regarding claim **64**, patent '494 claims a pixel region in which a plurality of thin film transistors are arranged in matrix; a picture signal supply source; a gamma

Art Unit: 2814

correction control circuit, wherein the plurality of TFTs and the gamma correction control circuit are provided over the same insulating surface (claim 1). Patent '494 does not specifically claim a switching circuit connected to a source signal line and a plurality of voltage lines for selecting at least one of said voltage lines, nor a latch circuit for supplying said picture signal from said picture signal supply source to said switching circuit. However, it does specifically claim a driver for switching the plurality of TFTs. Column 5, lines 65-67 discloses that the "driver 106 is constituted by a shift register, a buffer, a digital decoder, a D/A converter, and the like".

Huang describes a digital data driver, which contains the same driver elements as disclosed by patent '494 and the instant application. Figure 1 shows a shift register, a latch circuit for supplying a picture signal (digital input data) and a switching circuit (8:1 multiplexer) connected to a source signal line (digital data in latches) and a plurality of voltage lines (8 reference voltages). It would have been obvious to one of ordinary skill in the art at the time of the invention to specify the basic elements of the digital driver and integrate those elements into the invention. A driver consisting of these specific elements allows each reference voltage line to be tailored to yield an equalized grey scale, and also allows the display to interface with different image sources (Huang pg. 4 ln. 8-13).

With regards to claim **65**, patent '494 claims a device according to claim 64 wherein said picture signal is a digital signal (claim 4).

With regards to claim **66**, patent '494 claims a device according to claim 64 wherein said picture signal is an analog signal, and the device further comprises a conversion circuit for converting said analog signal to a digital signal (claim 5).

Regarding claim **67**, patent '494 claims a device according to claim 64 wherein an active layer of each thin film transistor has a thickness of 10 to 100nm (claim 6).

Regarding claim **68**, patent '494 claims a device according to claim 64 wherein said semiconductor device is incorporated into one selected from a group consisting of a video camera, a still camera, a projector, a head mount display, a car navigation system, a personal computer, a portable information terminal, a mobile computer and a portable telephone (claim 7).

With regards to claim **69**, patent '494 in view of Huang, as applied to claim 64 above, claims a device according to claim 64 further comprising a shift register.

Regarding claim **71**, patent '494 claims a semiconductor device comprising an electroluminescence element; a pixel region in which a plurality of thin film transistors are arranged in matrix; a picture signal supply source for supplying a picture signal; a gamma correction control circuit for adjusting a voltage, wherein said plurality of thin film transistors and said gamma correction control circuit are provided over a same insulating surface (claim 13). Huang teaches the missing claim language in patent '494 (switching circuit and latch circuit language) as discussed above.

With regards to claim **72**, patent '494 claims a device according to claim 71 wherein said picture signal is a digital signal (claim 16).

With regards to claim **73**, patent '494 claims a device according to claim 71 wherein said picture signal is an analog signal, and the device further comprises a conversion circuit for converting said analog signal to a digital signal (claim 17).

Regarding claim **74**, patent '494 claims a device according to claim 71 wherein an active layer of each thin film transistor has a thickness of 10 to 100nm (claim 18).

Regarding claim **75**, patent '494 claims a device according to claim 71 wherein said semiconductor device is incorporated into one selected from a group consisting of a video camera, a still camera, a projector, a head mount display, a car navigation system, a personal computer, a portable information terminal, a mobile computer and a portable telephone (claim 19).

With regards to claim **76**, patent '494 in view of Huang claims a device according to claim 71 further comprising a shift register. See the discussion of claim 64 above regarding the shift register.

Regarding claim **78**, patent '494 claims a pixel region in which a plurality of thin film transistors are arranged in matrix; a picture signal supply source; a gamma correction control circuit, and a memory for storing data used in gamma correction, wherein the plurality of TFTs and the memory and the gamma correction control circuit are provided over the same insulating surface (claim 1). Huang teaches the missing claim language in patent '494 (switching circuit and latch circuit language) as discussed above.

Regarding claim **79**, patent '494 claims a device according to claim 78 wherein the memory is a nonvolatile memory (claim 2).

Regarding claim **80**, patent '494 claims a device according to claim 78 wherein said picture signal is a digital signal (claim 4).

With regards to claim **81**, patent '494 claims a device according to claim 78 wherein said picture signal is an analog signal, and the device further comprises a conversion circuit for converting said analog signal to a digital signal (claim 5).

Regarding claim **82**, patent '494 claims a device according to claim 78 wherein an active layer of each thin film transistor has a thickness of 10 to 100nm (claim 6).

Regarding claim **83**, patent '494 claims a device according to claim 78 wherein said semiconductor device is incorporated into one selected from a group consisting of a video camera, a still camera, a projector, a head mount display, a car navigation system, a personal computer, a portable information terminal, a mobile computer and a portable telephone (claim 7).

With regards to claim **84**, patent '494 in view of Huang claims a device according to claim 78 further comprising a shift register. See the discussion of claim 64 above regarding the shift register.

With regards to claim **85**, patent '494 in view of Huang claims a device according to claim 78 wherein said memory comprises a thin film transistor (claim 3).

Regarding claim **87**, patent '494 claims a semiconductor device comprising an electroluminescence element; a pixel region in which a plurality of thin film transistors are arranged in matrix; a picture signal supply source for supplying a picture signal; a gamma correction control circuit for adjusting a voltage, and a memory for storing data used in gamma correction, wherein said plurality of thin film transistors and said gamma

Art Unit: 2814

correction control circuit are provided over a same insulating surface (claim 13). Huang teaches the missing claim language in patent '494 (switching circuit and latch circuit language) as discussed above.

Regarding claim **88**, patent '494 claims a device according to claim 87 wherein the memory is a nonvolatile memory (claim 14).

Regarding claim **89**, patent '494 claims a device according to claim 87 wherein said picture signal is a digital signal (claim 16).

With regards to claim **90**, patent '494 claims a device according to claim 87 wherein said picture signal is an analog signal, and the device further comprises a conversion circuit for converting said analog signal to a digital signal (claim 17).

Regarding claim **91**, patent '494 claims a device according to claim 87 wherein an active layer of each thin film transistor has a thickness of 10 to 100nm (claim 18).

Regarding claim **92**, patent '494 claims a device according to claim 87 wherein said semiconductor device is incorporated into one selected from a group consisting of a video camera, a still camera, a projector, a head mount display, a car navigation system, a personal computer, a portable information terminal, a mobile computer and a portable telephone (claim 19).

With regards to claim **93**, patent '494 in view of Huang claims a device according to claim 87 further comprising a shift register. See the discussion of claim 64 above regarding the shift register.

With regards to claim **94**, patent '494 in view of Huang claims a device according to claim 87 wherein said memory comprises a thin film transistor (claim 15).

6. Claims **70, 77, 86, and 95** are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,667,494 in view of Huang and further in view of U.S. Patent No. 6,597,014. Patent '494 in view of Huang describe claims 64, 71, 78, and 87 as discussed above, but do not specify that said gamma correction control circuit comprises a thin film transistor. Patent '014 claims a correction circuit comprised of at least one thin film transistor, wherein said correction circuit is a gamma correction circuit.

Allowable Subject Matter

7. Claims **51-63** are allowed. Prior art does not anticipate a semiconductor device with the limitations recited in claims 51 and 57.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the


shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John C. Ingham whose telephone number is (571) 272-8793. The examiner can normally be reached on M-F, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jci


GEORGE ECKERT
PRIMARY EXAMINER